

REMARKS

I. Status of the Application

Claims 1-8 were pending in the application prior to this amendment. Claims 1 and 3-8 stand rejected. The Examiner objected to claim 2 as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form.

With this amendment, claims 1-4, 5, 7 and 8 have been amended. No new matter has been introduced by this Amendment.

II. Response to Objections

The Examiner objected to the title as being “not descriptive.”

In response to the Examiner’s objection, Applicant has amended the title as indicated above, i.e., VIBRATION COMPENSATION APPARATUS USING A COORDINATE CONVERSION.

Applicant believes that no further formal issues exist in the specification, and therefore, respectfully request that the objection to the specification be withdrawn.

The Examiner objected to claim 5 because of informalities.

In response to the objection, Applicant has amended claim 5 as shown above and respectfully request that the objection to claim 5 now be withdrawn.

III. Response to Rejections Under 35 U.S.C. §102

Claims 1 and 3-8 stand rejected under 35 U.S.C. §102(b) as allegedly anticipated by U.S. Patent 6,343,188 to Morofuji (hereafter, “Morofuji”).

Morofuji discloses an image blur correction apparatus having movement correction means that corrects a movement of an image caused by the vibration, and control means that detects the response characteristics of the movement correction means with respect to a predetermined driving signal (e.g., a test driving signal). When the response characteristics are detected by the control means, the offset is corrected so that a change in characteristics caused by a mechanical error can be corrected. See, e.g., col. 2, lines 7-24 of Morofuji.

Independent claims 1 and 7 have been amended for further clarification. In particular, amended claim 1 recites, *inter alia*, “a conversion unit that converts the angular

velocity signals expressed in the vibration detection axes directions obtained by said angular velocity detector or vibration compensation signals based on the angular velocity signals into angular velocity signals or vibration compensation signals expressed in the vibration compensation axes directions.” Claim 7 is a method claim that mirrors claim 1 and is amended in a similar manner to claim 1 as discussed herein. Support for the amendment may be found, for example, on page 16, line 12 through page 20, line 16 of the original specification.

Independent claim 1 has been amended to clarify that there are two sets of orthogonal axes, namely, vibration detection axes (x and y axes) and vibration compensation axes (X and Y axes) as shown in figures 5A and 5B. The vibration detection axes are of the angular velocity detector and the vibration compensation axes are of the compensation unit.

Generally, as described on page 3, lines 18-26 of the Specification, the angular velocity detector and the compensation unit have to be precisely aligned so that the axes of the angular velocity detector and the compensation unit perfectly match each other. If the axes do not match, proper vibration compensation cannot be achieved.

The present invention relates to compensating a misalignment between the angular velocity detector and the compensation unit using the conversion unit. The misalignment between the angular velocity detector and the compensation unit is compensated by converting the angular velocity signals or vibration compensation signals based on the angular velocity signals which are expressed in the vibration detection axes directions of the angular velocity detector into those expressed in the vibration compensation axes directions of the compensation unit. By converting signals in this way, even when axes of the angular velocity detector and the axes of the compensation unit do not perfectly match, vibration compensation can still be performed properly.

By contrast, Morofuji, in order to obtain optimum driving characteristics of the vibration correction unit, corrects a deterioration in vibration correction characteristics which is caused by a mechanical degradation, such as shaft friction or deformation caused by the temperature and time change of vibration correction unit. Morofuji discloses a calibration function which detects the frequency characteristic, the driving limit, and the initial position from the response characteristics obtained when a predetermined test driving signal is supplied to the VAP, and corrects the offsets of the characteristics of the VAP.

However, Morofuji does not teach or suggest compensating the misalignment between the angular velocity detection unit and the VAP. The integration unit 203, as taught by Morofuji, does not convert the detected angular velocity signals or vibration compensation signals based on the angular velocity signals expressed in the vibration detection axes directions of the angular velocity detector into those expressed in the vibration compensation axes directions of the compensation unit, as recited in independent claim 1. Namely, the conversion unit of the present invention is not disclosed or suggested by Morofuji.

Therefore, Applicant submits that independent claim 1 as amended is distinguishable over Morofuji for at least the reasons discussed above. For reasons similar to those described above with respect to independent claim 1, independent claim 7 is also believed to be distinguishable over Morofuji.

Reconsideration and withdrawal of the rejections of claims 1 and 7 under 35 U.S.C. § 102(b) is respectfully requested.

Applicant has not individually addressed the rejections of the dependent claims (i.e., claims 2-6 and 8) because Applicant submits that the independent claims from which they respectively depend are in condition for allowance as set forth above. Applicant however reserves the right to address such rejections of the dependent claims should such be necessary.

Applicant believes that the application as amended is in condition for allowance and such action is respectfully requested.

CONCLUSION

Based on the foregoing amendments and remarks, Applicant respectfully requests reconsideration and withdrawal of the rejection of claims and allowance of this application.

AUTHORIZATION

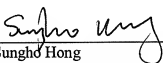
The Commissioner is hereby authorized to charge any additional fees which may be required for consideration of this Amendment to Deposit Account No. 13-4500, Order No. 1232-5229. A DUPLICATE OF THIS DOCUMENT IS ATTACHED.

In the event that an extension of time is required, or which may be required in addition to that requested in a petition for an extension of time, the Commissioner is requested to grant a petition for that extension of time which is required to make this response timely and is hereby authorized to charge any fee for such an extension of time or credit any overpayment for an extension of time to Deposit Account No. 13-4500, Order No. 1232-5229. A DUPLICATE OF THIS DOCUMENT IS ATTACHED.

Respectfully submitted,
MORGAN & FINNEGAN, L.L.P.

Dated: June 20, 2007

By: _____


Sungho Hong
Registration No. 54,571
(212) 415-8700 Telephone
(212) 415-8701 Facsimile

Correspondence Address:
MORGAN & FINNEGAN, L.L.P.
3 World Financial Center
New York, NY 10281-2101

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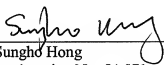
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